Leptochiton denhartogi, a new species of Polyplacophora (Mollusca) from Angola

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Key words: Polyplacophora; Leptochitonidae; new species; Angola; West Africa.
Leptochiton denhartogi is described and compared with several closely related species.

Introduction

In 1989 I received a small collection of chitons from Mr F. Fernandez (Luanda, Angola) which included a sample of an unidentified species of *Leptochiton* dredged off Luanda (Angola). Later on I received additional specimens of the same species from the private collection of Emilio Rolán (Vigo, Spain), and from the collection of the Museum National d'Histoire Naturelle (Paris, France). These samples were also from Angola. The unknown species is here described and depicted as *Leptochiton denhartogi*.

Abbreviations for collections: ER = Emilio Rolán; HLS = Hermann L. Strack; MNHN = Museum National d'Histoire Naturelle, Paris; RMNH = Nationaal Natuurhistorisch Museum, Leiden.

Sytematic part

Leptochiton denhartogi spec. nov.
(figs 1-8)

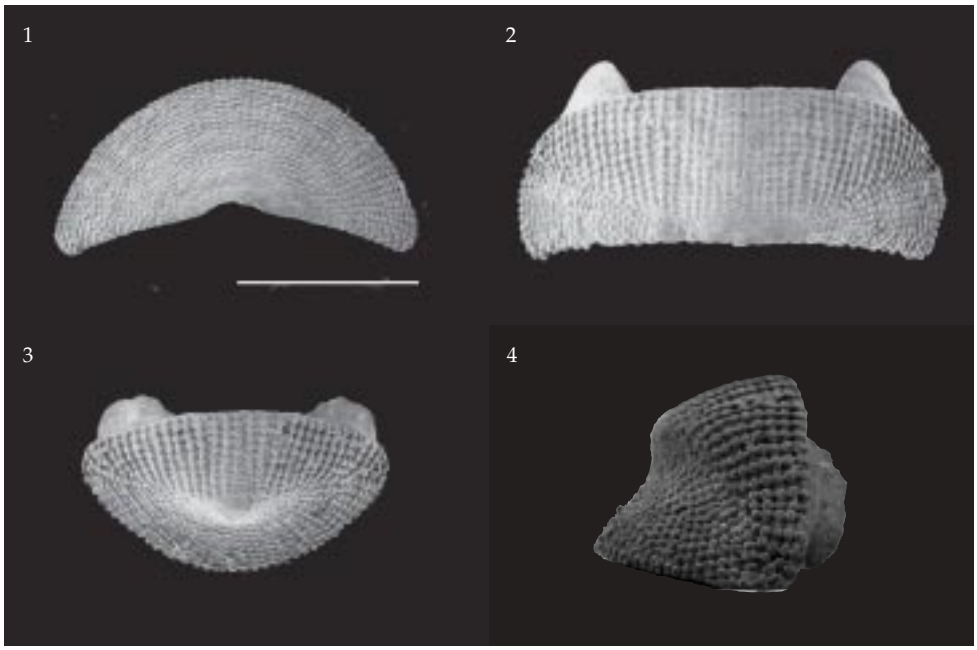
Material.— Angola, off Luanda, 50-60 m, attached to stones or dead shells, 10.iii.1989, F. Fernandez leg., holotype (RMNH no. 94969) & 13 paratypes (HLS no. 2358) three of which are disarticulated; Angola, Ilha de Luanda, dredged, 40-60 m, S. Gofas leg., 5 paratypes (MNHN); Angola, Prov. Luanda, off Mussolo, dredged, 90-100 m, S. Gofas leg., 2 paratypes (MNHN); Angola, Luanda, dredged, 20 m, 1 paratype (ER); Angola, Luanda, dredged, 100 m; 1 paratype (ER).

Description.— Animal small, largest specimen 4.2 × 2.9 mm (holotype), elongated oval, moderately elevated (height/width quotient 0.38 - 0.4), back rounded to subcarinated, side slopes convex. Colour white, cream or yellowish brown with occasional black deposits.

Head valve (fig. 1) less than semicircular, anterior slope straight to slightly convex, posterior margin very widely V-shaped.

Intermediate valves (fig. 2) rectangular, not or very little beaked. Anterior margin more or less straight between the apophyses, side margins evenly rounded. Lateral areas not raised in smaller specimens and somewhat raised in larger ones, which often have conspicuous growth marks on lateral areas.

Tail valve (figs 3-4) less than semicircular. Mucro swollen and prominent, situated



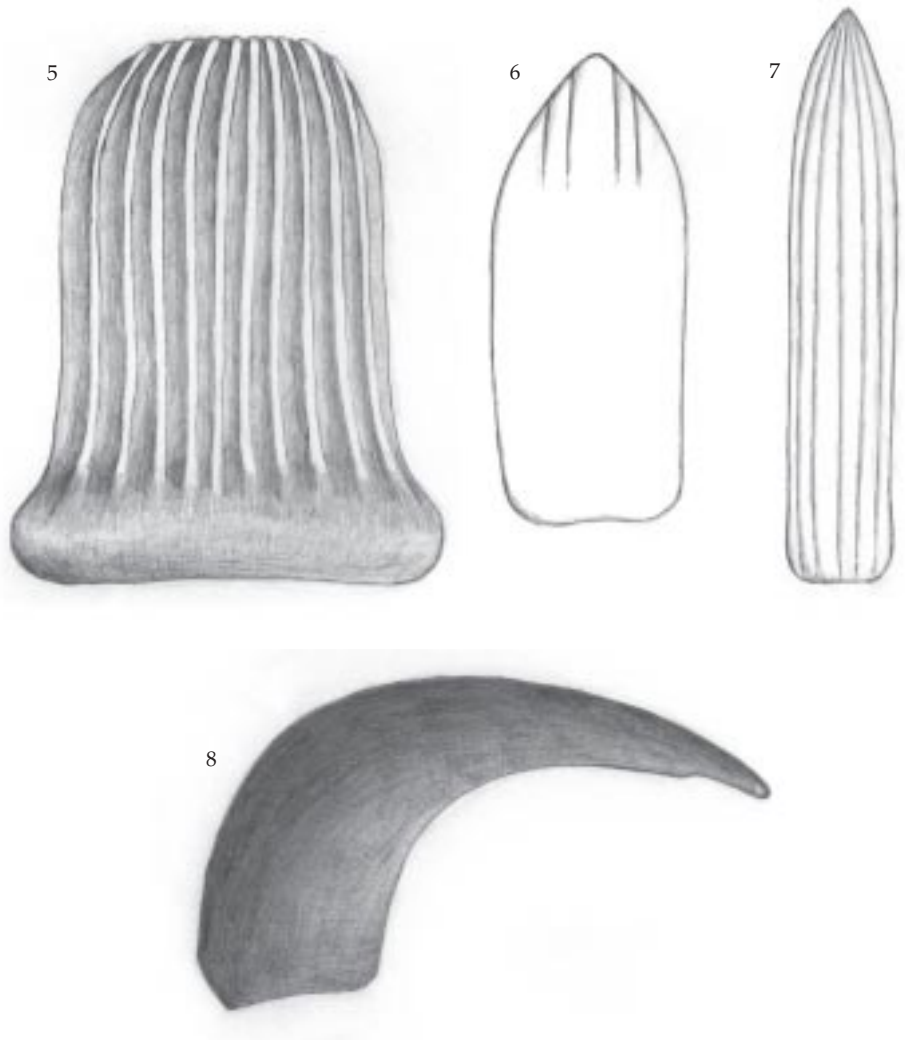
Figs 1-4. *Leptochiton denhartogi* spec. nov.; paratype, off Luanda, Angola, 50-60 m, 10.iii.1989 (HLS 2358). 1, head valve, dorsal view; 2, intermediate valve, dorsal view; 3, tail valve, dorsal view; 4, tail valve, lateral view. Scale bar = 1 mm.

somewhat posterior, postmucronal slope slightly concave in younger specimens and straight and steep in older ones.

Tegmentum coarsely sculptured with round granules arranged in longitudinal chains. Granules on central areas of intermediate valves and antemucronal area of tail valve mostly coalesced but still very prominent, with distinct interspaces between the separate rows, which are slightly latticed. About 40 chains of granules on central areas. Head valve, lateral areas of intermediate valves and postmucronal area of tail valve with radial rows of separate granules without interspaces. Head valve with ca. 60 rows of granules, lateral areas with 9-12 somewhat irregular rows, and postmucronal area of tail valve with ca. 35 rows. Granules relatively large, 32-50 µm in diameter, and high-elevated (ca. 20 µm). Posterior margin of lateral areas often serrated by large granules.

Articulamentum white; apophyses small, triangular in intermediate valves, evenly rounded in tail valve; jugal sinus wide and more or less straight.

Girdle very narrow with bunches of 3-5 long, needle-like spines on the perinotum tongues between the valves. Examination of girdle elements of two ca. 3.5-4 mm long specimens gave the following results. Dorsally covered with imbricating, curved scales (fig. 5), 28-50 × 25-60 µm, ornamented with 7-12 riblets. Girdle ventrally paved with elongate, pointed scales (fig. 6), 60-75 × 23-28 µm, with about 3-5 riblets on distal half. Marginal spicules (fig. 7) long and slender, 75-110 × 15-20 µm, with 4-6 riblets. The long, intersegmental spines are cylindrical and smooth, 110-300 × 15-25 µm.



Figs 5-8. *Leptochiton denhartogi* spec. nov.; paratype, off Luanda, Angola, 50-60 m, 10.iii.1989 (HLS 2358). 5, dorsal girdle scale; 6, ventral girdle scale, 7, marginal spicule; 8, cusp of major lateral radula tooth, lateral view.

Radula.— The radula of a ca. 3.2 mm long specimen has 52 rows of mature teeth. Major lateral teeth with 40 µm long (up to 50 µm in 4 mm long specimen), strongly curved, sharply pointed unidentate cusps (fig. 8). Central tooth 20 × 18 µm, with a well-developed blade.

Gills.— Abanal and merobranchial, holotype with about 7-8 gills on both sides.

Distribution.— Only known from Angola, attached to stones or dead shells at depths between 20 and 100 m.

Differentiation.— *Leptochiton denhartogi* is most similar to *Leptochiton cancellatus*

(Sowerby, 1840) but differs from it by the coarser tegmental sculpture, the longitudinal chains of granules of the central areas of the intermediate valves having distinct interspaces, and being slightly latticed. Compared with *Leptochiton bedulli* Dell'Angelo & Palazzi, 1986, it has a weaker sculpture with narrower interspaces, dorsal girdle scales with about half the number of riblets and lateral radular teeth with unicuspid heads (tricuspid in *L. bedulli)*. The North West African species *Leptochiton odhneri* (Bergenhayn, 1931) has a weaker sculptured tegmentum with granules that are arranged in quincunx on head valve, lateral areas, and postmucronal area of tail valve, and the heads of the lateral radular teeth are tricuspid. *Leptochiton chariessa* (Barnard, 1963) from South Africa bears a superficial resemblance but grows about three times as large and has a weaker tegmental sculpture.

Etymology.— I first met Koos den Hartog in 1989, in the same year I was sent the above *Leptochiton* material. I really got to know him the year after during the Rumphius Biohistorical Expedition to Ambon (Indonesia). After our return from that expedition he took care of my interests in the Nationaal Natuurhistorisch Museum and his crowded room was my base there. I miss his kindness and our chats about books for which we shared a common passion.

As a token of friendship and appreciation I have named the above species after him.

Acknowledgements

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